3.4 Construction Contracts

3.4.1 Introduction

The goal of this program component is to reduce or eliminate pollutants from entering into the City's storm water conveyance system and any receiving waters due to construction activities. Storm water requirements for projects are contained in the San Diego Municipal Code (http://clerkdoc.sannet.gov/Website/mc/mc.html), as follows:

- Chapter 4 Article 3 Division 3 – Storm Water Management and Discharge Control
- Chapter 14 Article 2 Division 1 – Grading Regulations
- Chapter 14 Article 2 Division 2 – Drainage Regulations

Referenced in the regulation is the City of Los Angeles ***Reference Guide for Stormwater Best Management Practices, July 2000*** (http://www.lacity.org/san/swmd/) for use in determining appropriate storm water BMPs for projects. All City departments, including Engineering and Capital Projects, Development Services, Metropolitan Wastewater, and Water, responsible for inspecting construction activities will be responsible for ensuring that adequate storm water Best Management Practices (BMPs) are installed and maintained by the owner or contractor. The Storm Water Pollution Prevention Program (Storm Water Program) will assist the departments in implementing the storm water inspection requirements contained in the Municipal Storm Water Permit.

In January 2001, the City implemented the Storm Water Action Team (SWAT) Program which is activated during rain events**.** The focus of this program is to broaden the training, support and expertise of the City's Resident Engineers and redirect their efforts during periods of wet weather to insure that BMPs are being employed by contractors at construction sites to avoid polluted run off and that approved Storm Water Pollution Prevention Plans (SWPPPs) are being effectively implemented. This process will enable the City to utilize the Resident Engineers to assess the situations in the field, which will result in more effective use of engineers with more storm water training. The operational steps of SWAT are further defined in Section 2.2 – Construction Inspection Criteria of this component.

This program component must meet the requirements of the Municipal Storm Water Permit, as described in Table 3.4.1-1.

Table 3.4-1. Permit Requirements – Construction Contracts.

Section	*Requirement (Summary)*	*Permit Section*
3.4.2	Implement pollution prevention methods in construction portion of the City's Urban Runoff Management Program	F.2.a.
3.4.2	Incorporate water quality protection requirements into construction review process	F.2.c.
3.4.2	Designate and implement BMPs for construction sites	F.2.f.

Section	***Requirement (Summary)***	***Permit Section***
3.4.2	Inspect of construction sites	F.2.g.
3.4.2	Enforce ordinances and permits at construction sites	F.2.h.
3.4.2	Report non-compliant construction sites	F.2.i.
3.4.2	Implement an educational program for New Development and Redevelopment and all pertinent target audiences	F.2.j. F.4.a F.4.b F.4.c
3.4.3	Develop a budget for City-wide construction-related storm water expenditures for each fiscal year covered by the Municipal Permit	F.8
3.4.4	Document activities for Jurisdictional Urban Runoff Management Program Annual Report	I

The objectives of this program component are to:

- Incorporate requirements into the construction review process to control non-storm water discharges at construction sites, and reduce the discharge of pollutants into and from the storm water conveyance system to the maximum extent practicable.
- Require the selection and incorporation of appropriate construction BMPs for storm water quality management at construction sites.
- Conduct an inspection program, including enforcement procedures, to verify that the construction control measures are implemented and performed effectively throughout the construction phase.
- Educate City staff on pollution prevention techniques, and assist in educating contracted consultants and the construction industry on storm water regulations, BMPs, pollution prevention requirements and techniques.
- Identify a phased implementation schedule and associated estimated costs needed to implement the Construction component through the five-year life of the Municipal Permit.
- Document storm water pollution prevention activities conducted on construction sites (change as needed), which will then be submitted annually to the Storm Water Pollution Prevention Program along with an annual activities report.

3.4.2 Activities

1.0 Construction Monitoring Program – Part I

The City has a Construction Monitoring Program in place to effectively monitor construction activities. The program has two parts. The first, as outlined below, discusses the City's methods for site prioritization and its expectations for site

management and selection and implementation of storm water BMPs. The second part addresses the inspection monitoring, enforcement and violation procedures.

The outline of the Construction Monitoring Program, Part 1 is as follows:

1.1 Identify the potential pollutant sources of pollution at the project site and identify the size and location of each project and proximity to protected resources;

1.2 Prioritize sites in order to establish municipal monitoring time lines based upon the source of the pollutants of concern, size and proximity to protected resources;

1.3 Establish storm water pollution prevention management measures for each site and evaluate the effectiveness of the best management practices;

1.3.1 Define dry and wet season requirements;

1.3.2 Provide guidance for BMP requirements.

1.4 Define the interaction of performance standards, site management and BMPs

1.1 Source Identification

Construction sites include any site where an activity such as grading, excavation, clearing, road construction, structure construction, or demolition results in the disturbance of soil. Sources identified by the City of San Diego include: City issued Building Permits, City issued Grading Permits, City issued Clearing Permits, other City issued construction related permits, Capital Improvement Projects, Encroachment Permits, and City Operations and Maintenance Activities. Proof of compliance with the California General Construction Permit for construction activities for sites greater than 5 acres is required before the City will issue a grading permit.

In determining site prioritization, the City evaluates potential threats to water quality of construction sites based upon the following:

1) Soil erosion potential
Each site will need to be evaluated for the role soil erosion potential has on the construction site. Soils in San Diego County are generally highly erosive. Therefore, the threat caused by the erosion potential should be considered for all sites.

2) Onsite slopes

Site slope(s) introduce a potential for discharging pollutants. Steep slopes can generate high velocities of water leaving the site. The higher the velocity for runoff, the greater the potential exists for sediment to be dislodged from the surface and transported. Onsite slope conditions should be evaluated as a potential pollutant source.

3) Project type and size
The total disturbed area of a site is an important factor in determining what priority is going to be assigned to a site. The City has determined a general listing of project categories to consider the amount of disturbed area when prioritizing.

4) Means and methods of construction
Evaluating construction methods is key to controlling pollution in and around sensitive water bodies. The method and timing (seasonal) a contractor/owner uses to scarify, clear and grub a site leaving it exposed will likely increase a priority designation (i.e., BMP requirements). The amount of exposed soil at any given time/phase of a project should be considered in determining priorities.

5) Non-storm water discharges
In evaluating the priority that a site should have during construction activities, the types of non-storm water pollutants that have the potential to be discharged during construction activities should be considered. An example of some non-storm water and activities that generate pollutants commonly found on construction sites include:
   - Soil amendments
   - Fertilizers
   - Building materials waste
   - Concrete waste
   - Water as a result of dewatering
   - Construction materials and compounds
   - Types of machinery on site
   - Maintenance of equipment on site
   - Spoils and debris from excavation

6) Sensitivity of water bodies
In determining the priority of a construction site, it should be determined if the site is within an area with environmentally sensitive water bodies and that the site has the potential to discharge construction related pollutants into the receiving waters. Environmentally Sensitive water bodies may include but are not limited to all Clean Water Act (CWA) Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Resources Control Board (Water Quality Control Plan for the San

Diego Basin (1994) and amendments); water bodies designated with the Rare, Threatened or Endangered Species (RARE) beneficial use by the State Water Resources Control Board (Water Quality Control Plan for the San Diego Basin (1994) and amendments); areas designated as preserves or their equivalent under the Multi Species Conservation Program within the Cities and County of San Diego; and any other equivalent environmentally sensitive areas which have been identified for the region. The methodology chosen for this process should be repeated periodically to ensure that program priorities continue to reflect the best available data and information. Program priorities can best be tailored over time as a more complete record is established. This may point to three possibilities, (1) continued priority listing, (2) discontinuance of priority listings, or (3) new listings.

7) Practices and past history of construction owners
Consideration shall also be given to a contractor's and/or owner's past performances associated with storm water pollution prevention.

1.2 Site Prioritization

The City of San Diego will not collectively prioritize construction activities/ projects but will allow each Department to determine priorities independently using the general guideline of categories. The items listed in ***Section 1.1 Source Identification*** played a key role in developing guidelines for prioritizing sites. The Storm Water Program is available to assist departments to determine which priority category a project fits in. Each project shall consider the existing and surrounding conditions, the type of activities necessary to complete the construction and any other extenuating circumstances that may pose a threat to water quality.

Projects may begin as high priority and as they progress to a point where the site is developed they may become a medium or low priority. For example, as a subdivision (greater than 5 acres) is substantially built-out into a community, the raw land is converted to properties with established landscaping and infrastructure but building continues on established pad areas. The flat construction site(s) would be less likely to produce storm water pollution.

1) High Priorities

   A) Projects where the site is 50 acres or more and grading will occur during the wet season
   B) Projects 5 acres or more and tributary to an impaired water body for sediment (e.g., Penasquitos watershed)

C) Projects 5 acres or more within or directly adjacent to or discharging directly to a coastal lagoon or other receiving water within an environmentally sensitive area
D) Projects, active or inactive, adjacent to sensitive water bodies
E) Construction activities requiring close attention due to past performances

2) Medium Priority

A) Capital Improvement Projects where grading occurs, however a Storm Water Pollution Prevention Plan (SWPPP) is not required under the State General Construction Permit (i.e., water and sewer replacement projects, intersection and street re-alignments, widening, comfort stations, etc.)
B) Permit projects in the public right-of-way where grading occurs, however SWPPPs are not required, such as installation of sidewalk, substantial retaining walls, curb and gutter for an entire street frontage, etc.
C) Permit projects on private property where grading permits are required (i.e., cuts over 5 feet, fills over 3 feet), however, Notice Of Intents (NOIs) and SWPPPs are not required.

3) Low Priority

A) Capital Projects where minimal to no grading occurs, such as signal light and loop installations, street light installations, etc.
B) Permit projects in the public right-of-way where minimal to no grading occurs, such as pedestrian ramps, driveway additions, small retaining walls, etc.
C) Permit projects on private property where grading permits are not required, such as small retaining walls, single-family homes, small tenant improvements, etc.

Projects Not Subject to Storm Water Inspections

City storm water inspections will not be conducted on those projects where all activity, including storage and handling of construction-related materials and any wastes or spills, will be completely enclosed (i.e., not exposed to storm water) and no conduit to storm drains or surface waters exist (except for sanitary sewer system). Examples of types of activities that would be exempt include interior remodeling, mechanical permit work, electrical permit work, tenant improvements, signs, changes of use within an existing building, temporary mobile home and trailer permits, minor permits accessory to an existing building

such as patio covers, decks and carports, and emergency construction activities required for immediate protection of public health and safety.

The fact that the City did not conduct an inspection would not relieve property owners or contractors from preventing any construction-related materials, wastes, spills or residues from entering a storm water conveyance system.

1.3 Site Management Requirements

Construction is a dynamic operation where changes are expected. Storm water BMPs for construction sites are usually temporary measures that require frequent maintenance to maintain their effectiveness and may require relocation, revision and re-installation, particularly as project grading progresses. Therefore, owner/contractor self-inspections are required. They shall be performed by the owner's/contractor's Qualified Contact Person specifically trained in storm water pollution prevention site management and storm water BMPs, including the installation and maintenance of sediment and erosion control measures. Additional qualified persons may assist with the inspection activities under the direction of the Qualified Contact Person. A Qualified Contact Person is required for all sites during both wet and dry weather conditions.

There are four primary purposes of the self-inspections conducted by owners and contractors:

- To ensure that the owners/contractors take full responsibility for managing storm water pollution caused by their activities.
- To ensure that storm water BMPs are properly implemented and functioning effectively.
- To identify maintenance (e.g., sediment removal) and repair needs.
- To ensure that the project proponents implement their storm water management plans.

A self-inspection checklist, noting date, time, conditions and inspection date, must be kept on-site and made available for inspection, if requested. Self-inspections must be performed by a Qualified Contact Person according to the following schedule:

- Daily forecasting at all times
- At 24-hour intervals during extended rainfall events
- Daily evaluations as earth moving/grading is being conducted during the wet season
- Weekly (every 7 days) in the dry season as earth moving/grading is progressing

Storm water pollution prevention site management requirements include:

1. A qualified person who is trained and competent in the use of BMPs shall be on site daily, although not necessarily full time, to evaluate the conditions of the site with respect to storm water pollution prevention. This qualified contact person shall represent the contractor/ owner on storm water issues.
2. The qualified person shall implement the conditions of the Storm Water Pollution Prevention Plan, contract documents and/or local ordinances with respect to erosion and sediment control and other waste management regulations.
3. The qualified person is responsible for monitoring the weather and implementation of any emergency plans as needed. The weather shall be monitored on a 5-day forecast plan and a full BMP protection plan shall be activated when there is a 40% chance of rain.
4. The qualified person is responsible for overseeing any site grading and operations and evaluating the effectiveness of the BMPs. This person shall modify the BMPs as necessary to keep the dynamics of the site in compliance. This person or other qualified persons are responsible for checking the BMPs routinely for maintenance.

1.3.1 Performance Standards

The City of San Diego will evaluate the adequacy of the owner's/contractor's site management for storm water pollution prevention, inclusive of BMP implementation, on construction sites based on performance standards for storm water BMPs. Performance standards shall include:

A. No measurable increase of pollution (including sediment) in runoff from the site.
B. No slope erosion.
C. Water velocity moving offsite must not be greater than pre-construction levels.
D. Poor BMP practices shall be challenged.

A site will be considered inactive if construction activities have ceased for a period of 7 or more consecutive calendar days. At any time of year, an inactive site must be fully protected from erosion and discharges of sediment. It is also the owner's/contractor's responsibility at both active and inactive sites to implement a plan to address all potential non-storm water discharges.

BMP requirements differ between the wet season (Oct. 1 – Apr. 30) and the dry season (May 1 – Sept. 30), the type of the project and topography of the site.

1.3.1.1 Dry Season Requirements (May 1 through September 30):

A. Perimeter protection BMPs must be installed and maintained to comply with performance standards (above).
B. Sediment control BMPs must be installed and maintained to comply with performance standards (above).
C. BMPs to control sediment tracking must be installed and maintained at entrances/exits to comply with performance standards (above).
D. Material needed to install standby BMPs necessary to completely protect the exposed portions of the site from erosion, and to prevent sediment discharges, must be stored on site. Areas that have already been protected from erosion using physical stabilization or established vegetation stabilization BMPs as described below are not considered to be "exposed" for purposes of this requirement.
E. The owner/contractor must have an approved "weather triggered" action plan and have the ability to deploy standby BMPs as needed to completely protect the exposed portions of the site within 24 hours of prediction of a storm event (a predicted storm event is defined as a forecasted, 40% chance of rain). On request, the owner/contractor must provide proof of this capability that is acceptable to the City of San Diego.
F. Deployment of physical or vegetation erosion control BMP's must commence as soon as grading and/or excavation is completed for any portion of the site. The project proponent may not continue to rely on the ability to deploy standby BMP materials to prevent erosion of graded areas that have been completed.
G. The area that can be cleared or graded and left exposed at one time is limited to the amount of acreage that the owner/contractor can adequately protect prior to a predicted rainstorm.

Requirement "G" will require grading to be phased at larger sites. For example, it may be necessary to deploy erosion and sediment control BMPs in areas that are not completed but are not actively being worked before additional grading is done.

1.3.1.2 Rainy Season Requirements (October 1 through April 30):

The following shall be required during the rainy season.

A. Perimeter protection BMPs must be installed and maintained to comply with performance standards (above).
B. Sediment control BMPs must be installed and maintained to comply with performance standards (above).
C. BMPs to control sediment tracking must be installed and maintained at site entrances/exits to comply with performance standards (above).
D. Material needed to install standby BMPs necessary to completely protect the exposed portions of the site from erosion, and to prevent sediment discharges, must be stored on site. Areas that have already been protected

from erosion using physical stabilization or established vegetation stabilization BMPs as described below are not considered to be "exposed" for purposes of this requirement.

E. The owner/contractor must have an approved "weather triggered" action plan and have the ability to deploy standby BMPs as needed to completely protect the exposed portions of the site within 24 hours of prediction of a storm event (a predicted storm event is defined as a forecasted, 40% chance of rain). On request, the owner/contractor must provide proof of this capability that is acceptable to the City of San Diego.
F. Deployment of physical or vegetation erosion control BMPs must commence as soon as grading and/or excavation is completed for any portion of the site. The owner/contractor may not continue to rely on the ability to deploy standby BMP materials to prevent erosion of graded areas that have been completed.
G. The area that can be cleared or graded and left exposed at one time is limited to the amount of acreage that the owner/contractor can adequately protect prior to a predicted rainstorm.
H. Erosion control BMPs must be upgraded if necessary to provide sufficient protection for storms likely to occur during the rainy season.
I. Perimeter protection and sediment control BMPs must be upgraded if necessary to provide sufficient protection for storms likely to occur during the rainy season.
J. Adequate physical or vegetation erosion control BMPs must be installed and established for all graded areas prior to the start of the rainy season. These BMPs must be maintained throughout the rainy season. If a selected BMP fails, it must be repaired and improved, or replaced with an acceptable alternate as soon as it is safe to do so. The failure of a BMP shows that the BMP, as installed, was not adequate for the circumstances in which it was used and shall be corrected or modified as necessary. Repairs or replacements must therefore put a more effective BMP in place.
K. All vegetation erosion control must be established prior to the rainy season to be considered as a BMP.
L. The amount of exposed soil allowed at one time shall not exceed that which can be adequately protected by deploying standby erosion control and sediment control BMPs prior to a predicted rainstorm.
M. A disturbed area that is not completed but that is not being actively graded must be fully protected from erosion if left for 7 or more calendar days. The ability to deploy standby BMP materials is not sufficient for these areas. BMPs must actually be deployed.

1.3.2 Construction BMPs

It is the responsibility of the property owner and/or contractor to select, install and maintain appropriate BMPs. BMPs must be installed in accordance with an industry recommended standard or in accordance with the California General Permit for

Construction Activities requirements. More information about BMPs is provided in the Model Construction Program for San Diego Copermittees, the City of Los Angeles Reference Guide for Stormwater Best Management Practices, State Stormwater BMP Manuals, and Caltrans Standard BMP handbook.

Consistent with the California General Permit for Construction Activities, the City will require that both erosion and sediment control BMPs be installed and maintained for all grading and building projects in addition to materials management.

The following list of BMPs is provided for reference.

A. Erosion Control

Physical stabilization BMPs, vegetation stabilization BMPs, or both, will be required to prevent erosion and sediment runoff from exposed graded areas. BMPs for physical and vegetation stabilization include:

1) Physical Stabilization
    a) Geotextiles
    b) Mats
    c) Fiber rolls
    d) Sprayed on binders
    e) Other material approved by the City for use in specific circumstances

If physical stabilization is selected, materials must be appropriate to the circumstances in which they are deployed, and sufficient material must be deployed.

2) Vegetation Stabilization
    a) Preservation of existing vegetation
    b) Established interim vegetation (via Hydroseed, seeded mats, etc.)
    c) Established permanent landscaping

If vegetation stabilization is selected, the stabilizing vegetation must be installed, irrigated and established (uniform vegetative coverage with 70% coverage established) prior to October 1. In the event stabilizing vegetation has not been established by October 1, other forms of physical stabilization must be employed to prevent erosion until the stabilizing vegetation is established.

B. Sediment Control

1) Perimeter protection. Protect the perimeter of the site or exposed area from sediment ingress/discharge in sheet flows using:
    a) Silt fencing
    b) Gravel bag barriers
    c) Fiber rolls

2) Resource protection. Protect environmentally sensitive areas, and watercourses from sediment in sheet flows by using:
    a) Silt fencing
    b) Gravel bag barriers
    c) Fiber rolls

3) Sediment Capture. Capture sediments in channeled storm water by using:
    a) Storm-drain inlet protection measures
    b) De-silting basins (Designed in accordance with an industry standard such as Caltrans, California Storm water BMP manual etc. If the project is 5 acres or greater the desilting basin(s) must be designed in accordance with the State General Construction Permit, Order DWQ 99-08.)

4) Velocity Reduction. Reduce the velocity of storm water by using:
    a) Outlet protection (energy dissipater)
    b) Equalization basins
    c) Check dams

5) Off-site Sediment Tracking. Prevent sediment from being tracked off-site by using:
    a) Stabilized construction entrances/exits
    b) Construction road stabilization
    c) Tracking control (i.e., corrugated steel panels, wheel washes)
    d) Dust control

C. Materials Management

1) Prevent the contamination of storm water by wastes through proper management of the following types of wastes:
    a) Solid
    b) Sanitary
    c) Concrete
    d) Hazardous
    e) Equipment – related wastes
    f) Stock piles (protection from wind and rain)

2) Prevent the contamination of storm water by construction materials by:
    a) Covering and/or providing secondary containment of storage areas
    b) Taking adequate precautions when handling materials.

1.4 Relationship Between Performance Standards, Site Management Requirements, & BMPs

Implementation of the site management and BMP measures discussed above will not excuse a failure to meet the established performance standards. If a BMP is selected and implemented, but fails in actual use causing sediment or other pollutants to be discharged from the site, applicable regulations will have been violated. Similarly, the ability to deploy standby BMPs within 24 hours does not substitute for actual protection of slopes during storm events. Excessive erosion and sediment discharges are prohibited even if they result from a storm that arrives with less than 24 hours notice. Therefore, it is expected that owners/contractors will challenge any and all poor practices when installing and maintaining BMP's and will consider the qualifications of staff assigned to manage their sites for storm water pollution prevention.

2.0 Construction Monitoring Program – Part 2

Part 2 of the City's Construction Monitoring Program will discuss the inspection monitoring, enforcement and violation procedures in the following order:

2.1 Education/Communication prior to and during construction

2.2 Construction Inspection Criteria
- 2.2.1 Inspection Frequency/Prioritization
- 2.2.2 Inspection Monitoring/Criteria Procedure

2.3 Procedures for Corrective and Enforcement Actions
- 2.3.1 Notice of non-compliance
- 2.3.2 Violation notices
- 2.3.3 Stop work orders
- 2.3.4 Fines
- 2.3.5 Reporting of Violations

2.1 Education/Communication

It is the City's belief that education and communication throughout the construction process is the key to compliance. The City wishes to partner as much as possible with the construction industry and the community to inform them of the rules, regulations, ordinances, laws, etc. that govern storm water pollution prevention. A good faith effort by the City in the various departments that involve the potential for storm water pollution construction activities will be made to make our standards and expectations clear. Educational efforts that have been done and are done on a continual basis are detailed in the Education & Training section.

2.2 Construction Inspection Criteria

When conducting inspections, the most important element of the inspection is to ensure that the appropriate controls are in place to reduce pollutants from entering the storm water conveyance system. Additionally, the City inspector shall evaluate the controls and determine whether the site is in compliance or not.

The City has implemented the Storm Water Action Team (SWAT) Program to coordinate storm water inspections with construction inspections. The basic operational steps of SWAT are as follows:

1. All Resident Engineers will be notified via pager when measurable rain is eminent and that the SWAT Program is active.
2. The Resident Engineers will immediately focus their attention on projects that have the highest potential for sediment discharges or are within the watershed of impaired water bodies for sediment (i.e. Los Penasquitos Lagoon) and insure that BMPs and SWPPPs are being employed at those sites. The Resident Engineers will also be responsible for exercising judgment in two primary areas:
    a. If they cannot, in their judgment, cover all of the sites within their area of responsibility that have a high potential of creating significant amounts of runoff, they will call for additional resources;
    b. If they are confronted with situations that require specialized storm water expertise, they will call for specialized personnel, who will be standing by.
3. The Deputy Director of Field Engineering and the Deputy Director of the Storm Water Program will share command responsibility of the field staff each time the SWAT Program is activated.

For the types of projects that occur in the City, the following process will be used as an inspection procedure.

1. Grading Permits-Subdivisions/Parcels/Land Development/Infrastructure:

    A. The planning and permits issuance phase initiates the need for erosion, sediment and hazardous waste control by placing key conditions on the plans for implementation by the owner. This includes the site management expectations as well as the BMPs being placed on the plans.

    B. The Resident Engineer shall evaluate the priority ranking established in Part 1 of this Construction Monitoring Program to determine inspection criteria necessary to ensure compliance. Priority inspection frequency is discussed in Section 2.2.1.

    C. The Resident Engineer will then establish a pre-construction meeting where the expectations on the plans as well as additional Fact sheets will

be provided for owner awareness of the goal of preventing pollutants from entering into the storm water conveyance system and any water resources.

D. The Resident Engineer will monitor and inspect the site. The Storm Water Pollution Checklist will be utilized on each site. The number of times this is used will vary dependant upon the priority of the project as established under Part 1.

E. The Resident Engineer may observe and request the self-inspection monitoring report as well.

F. The Storm Water Action Team (SWAT) may also visit the site, in addition to routine visits by the Resident Engineer before, during or after a rain event to ensure the high priority sites are being adequately managed.

G. Resident Engineers shall conduct joint inspections with State or Federal officials as appropriate.

H. The Resident Engineer shall evaluate the contractor for prioritizing future projects with them.

2. Capital Improvement Projects (City Contracts):

A. The Resident Engineer or Construction Manager (consultants hired by the City) will administer the contract on behalf of the City as the owner of the project. The site management and BMPs will be placed in the contract documents. This may also include SWPPP documents when they apply.

B. The Resident Engineer shall evaluate the priority ranking established in Part 1 of this Construction Monitoring Program to determine visit and inspection criteria necessary to ensure compliance. Inspection frequency for municipal projects is typically daily.

C. The Resident Engineer shall establish a pre-construction meeting where the expectations on the plans as well as additional fact sheets will be provided for owner awareness of the goal of no pollution in the storm drain system/tributary water resources.

D. The Resident Engineer shall manage the construction phase and enforce the contract requirements. Standard contract language for storm water BMPs will be used which will include detailed bidding sheets to account for

BMP payments, similar to Caltrans. Therefore, these standards will become usual and customary practice.

E. The Resident Engineer will utilize a Storm Water Pollution Checklist on each site. The number of times this is used will vary dependant upon the priority the project was established as, see Part 1. Job walks at meetings will take place. The Resident Engineer may request to see the self-inspection monitoring report as well.

F. The Storm Water Action Team (SWAT) may also visit the site.

G. Storm Water Pollution management by the contractor on these projects will be evaluated by the Resident Engineers at the end of the project when the Contractor Evaluation Form is completed. This information may be used to determine the priority of future projects with the contractor.

3. Permits – Right of Way/Encroachment:

A. The planning and permits issuance phase initiates the need for erosion, sediment and hazardous waste control by placing key conditions on the plans for implementation by the owner. This includes the site management expectations as well as the BMPs being placed on the plans.

B. The Resident Engineers will evaluate the priority ranking established in Part 1 of the Construction Monitoring Program to determine visit and inspection criteria necessary to ensure compliance. Priority inspection frequency is discussed below.

C. The owner/contractor will schedule a pre-construction meeting at which the Resident Engineers will review the expectations on the plans as well as provide additional Fact sheets for owner/contractor awareness of the goal of preventing pollutants from entering into the storm water conveyance system and any water resources.

D. The Resident Engineers will monitor the site ensure compliance with the contract documents. The resident engineers will utilize a Storm Water Pollution Checklist on each site. The number of times this is used will vary dependant upon the priority of the project as established under Part 1. Priority inspection frequency is further discussed in this section.

E. The Resident Engineer may observe and request the self-inspection monitoring report as well. The Storm Water Action Team (SWAT) may also visit the site, in addition to routine visits by the resident engineer

before, during or after a rain event to ensure the high priority sites are being adequately managed.

4. Permits – Buildings/Tenant Improvements/Private Property:

   A. The Development Services Department will provide a Fact sheet at the permit issuance explaining the expectations of the owner/contractor for storm water pollution prevention.

   B. During the grading and site work that is covered under the site preparation, the municipal resident engineers are responsible for storm water pollution prevention compliance as outlined above; refer to number 3 above. After the site finish grade is prepared, the perimeter BMPs, site drainage and tracking shall be installed and complete.

   C. At this time, the responsible charge of inspection is turned over to the building official who will monitor the site as a maintenance and operation item. It is also understood that building materials and other waste type pollution will be the focus of the building official.

   D. The municipal building officials and resident engineers will work together to gain compliance for each site.

5. Miscellaneous

   A. Activities that typically require no City inspection, however that may impact storm water conveyance system (i.e., private citizenry doing home improvements) will be addressed as part of enforcement of the City's Storm Water Ordinance, refer to Component 1.3 Enforcement of Storm Water Ordinance.

   B. Owners/contractors have a responsibility to inspect their construction activities to ensure water quality protection.

2.2.1 Inspection Frequency/Prioritization

As a general rule, the priority frequency of inspection monitoring is as identified in Table 3.4-2.

Table 3.4-2. Inspection frequency for High, Medium and Low Priority construction sites.

Priority Description	Wet Season (Oct. 1 – Apr. 30)	Dry Season (May 1 – Sept. 30)	Inspection Frequency
High priority			
Active Sites	X		Once a week
Active Sites		X	Once a month
Inactive Sites (no work for 7 days)	X		Every 7 days
Inactive Sites (no work for 7 days)		X	Once a month
Medium Priority	X		Twice (min)
		X	As needed
Low Priority	X		Twice (min.)
		X	As needed

Initial inspections will be conducted within five (5) working days of the pre-construction meeting or before start of construction for the project. Re-visits will be conducted as listed above as a minimum.

Inspections may be done daily or weekly for other routine quality control issues. At that time, the general implementation and effectiveness of the site management operations shall be observed and documented. If, in the opinion of the inspector the site is not being maintained as required, an inspection specifically for storm water pollution may be done.

Special considerations for site prioritization will also take into consideration the effectiveness of the contracting company to comply with the order. Should there be difficulty in gaining compliance, a project may increase in prioritization which will in turn increase the frequency of inspections.

Other inspections include pre-storm inspections, post-storm inspections and during storm inspections.

2.2.2 Inspection Monitoring/Criteria Procedure

The construction site will be assessed for the following:

- Identify the Qualified Contact Person (QCP) in responsible charge for the project
- The qualified person must demonstrate or show proof of knowledge and training on BMPs
- The qualified person shall make monitoring reports available to the Resident Engineer and assure the site is in compliance. This report must include weather inquiries, emergency plans in place and accessible on an immediate basis, BMP and staff resources available for quick action, maintenance logs, etc. Also, the log shall show 5 day forecasting and action plans in case a 40% chance of rain is announced.
- If the project does not require a SWPPP under the State General Construction Permit, erosion and sediment control plans included as part of the approved construction drawings shall be used.
- BMPs identified on the drawings or SWPPP shall be installed at the proper locations (in accordance with the specifications) and functioning properly.
- The plans/SWPPP shall reflect current site conditions.
- As required, Dry Weather site management shall be adequate. (e.g., ability to implement quickly, materials on-site or nearby, monitoring weather, perimeter protection in place, etc.)
- Operational storm drain inlets shall be protected.
- Natural drainage courses shall be protected.
- BMPs shall be in place in accordance with the erosion and sediment control plans included as part of the approved construction drawings or SWPPP and functioning properly.
- Non-storm water BMPs shall be used (e.g., concrete washouts irrigation runoff, oil containment, etc.)
- If present, all sediment traps/basins shall be functioning properly.
- Sediment, debris, and/or mud tracked from construction activities shall be cleaned from public roads and intersections on a daily basis or more frequently as directed by the Resident Engineer.
- Discharge points shall be free from any significant sediment transport.
- Erodible slopes shall be protected from erosion through the implementation of acceptable soil stabilization practices.
- Material and equipment handling, storage, and maintenance areas shall be clean and free of spills, leaks or other deleterious materials.
- On-site traffic routes, parking and storage of equipment and supplies shall be restricted to areas designated in the plans/SWPPP for those uses.
- Temporary stockpiles and/or construction materials shall be located in approved areas and protected from erosion.
- Seeded or landscaped and irrigation areas shall be maintained.
- BMPs shall be maintained in functional order.

Note 1: Regardless of the requirement for a SWPPP, pollution shall not leave the site per the City of San Diego Municipal Code and the Green Book.

Note 2: Regardless of compliance with erosion and sedimentation control details shown on the plans, pollution shall not leave the site, even if additional measures are required.

For projects greater than five acres, a storm water pollution prevention plan (SWPPP) must be on site and adhered to throughout the duration of the project.

2.3 Procedures For Corrective And Enforcement Actions

The City inspectors in cooperation with the Storm Water Pollution Prevention Program code enforcement staff will enforce storm water pollution prevention requirements for construction projects. The progressive enforcement steps of the Construction Monitoring Program are:

- Non-compliance/Correction Notices
- Notice of Violation
- Civil Penalties (Fines)

*Note: any or all of these steps may dictate the need to stop the work.

The City inspector will evaluate the site based upon the following (as previously defined) and issue a written notice or “Non-Compliance/Correction Notice” when:

- The checklist is completed and deficiencies are noted
- The plans/SWPPP is not being adhered to
- The erosion/sedimentation controls outlined on the plans are not being followed
- Best Management Practices are not being installed and/or maintained
- Sedimentation is noted entering the storm drain system or receiving water regardless of the quality of the BMPs
- Negligence and failure to take pro-active measures to control the work site
- Refusal and/or slow progress to correct deficiencies

The City inspector shall always conduct a routine follow up when giving a “Non-Compliance/Correction Notice” in a timely manner.

If a significant and/or immediate threat to water quality is observed by the City inspector, action shall be taken to require the owner/contractor to immediately cease the discharge. A Stop Work Order may be necessary in this case if all resources appear necessary to contain the pollution source.

If items listed above are not being properly managed by the owner/contractor performing the work as determined by a follow up inspection, the deficiencies listed on the "non-Compliance/Correction Notice" will be forwarded to the Storm Water Pollution Prevention Program along with the documentation of previous compliance requests for additional enforcement. (Refer to Component 1.3 – Enforcement of Storm Water Ordinance.)

2.3.1 Notice of Non-Compliance/Correction Notice

A common initial method of requesting corrective action and enforcing compliance is an issuance of a written notice of non-compliance from the inspector to the owner and/or contractor. The inspector will notify the owner/contractor of the concern and document the notification. A specific time frame for correcting the problem and a follow-up inspection date shall be documented by the inspector.

2.3.2 *Violation Notices*

A Notice of Violation shall be issued by the Storm Water Program code enforcement staff under the following incidences:

A. When pollutants are being discharged in the storm water conveyance system or directly into a receiving water
B. After Notice of Non-Compliance(s) have been issued but the owner/contractor does not take effective corrective action to protect the site and the existing situation will result in pollutants leaving the site.

In each case, the inspector shall immediately require the owner/contractor to correct the problem, write a non-compliance notice and document the non-compliance (photos), and report the violation to the Storm Water Pollution Prevention Program Code Compliance section for further action.

2.3.3 *Stop Work Orders*

If a Notice of Non-Compliance and/or a violation notice has not been corrected within a designated time period, or if the owner/contractor has not complied with their permit requirements, ***or if a significant threat to water quality is observed*** (such as a failure of BMPs resulting in a significant release of sediment or other pollutants off site), a stop work order may be issued. Stop work orders prohibit further construction activity until the problem is resolved and provide a time frame for correcting the problem. The stop work order will describe the infraction and identify the issue of non-compliance which will require immediate and continuous action until compliance is achieved. A copy of the

stop work order will be given to the owner/contractor and placed in the active inspection file.

To restart work once a stop work order has been issued, a re-inspection of the project must be requested and the inspector shall verify that the deficiencies have been satisfactorily corrected. If the inspector is satisfied with the corrections, the inspector may sign off on that phase of the project, and work may proceed.

2.3.4 ***Civil Penalties*** (***Fines)***

Penalties may result from storm water violations as allowable under the San Diego Municipal Code. The Storm Water Ordinance stipulates a maximum of $10,000 per day per violation (Refer to Component 1.3 – Enforcement of Storm Water Ordinance.)

2.3.5 Reporting of Non-Compliant Sites/Violations

The City of San Diego is required to provide oral notification to the San Diego Regional Water Quality Control Board (Regional Board) of violations sites that are determined to pose a threat to human or environmental health within its jurisdiction within 24 hours of the discovery of a violation. Such oral notification shall be followed up by a written report and submitted to the Regional Board Municipal Storm Water Permit Contact within 5 days of the incidence of a violation, if needed.

Storm water discharges generated during construction activities can cause an array of physical, chemical, and biological water quality impacts. Water quality impairment results, in part, because a number of pollutants are preferentially absorbed onto mineral or organic particles found in fine sediment. Erosion, sediment transport, and delivery are the primary pathways for introducing key pollutants such as nutrients (i.e. phosphorus), metals, and organic compounds into aquatic systems. Based on the potential for impacts by sediment transport to human or environmental health, criteria must be submitted by which to evaluate events of non-compliance to determine whether they pose a threat to human or environmental health. Some criteria to be considered during evaluation of an event producing a violation, whether from storm water or non-storm water discharges, are as follows:

- Estimated area of erosion caused by discharge.
- Estimated sediment load discharged from site.
- Were toxic materials discharged from site.
- Proximity of site to sensitive water body (i.e., is discharge to ocean, creek, river, etc)
- Proximity of site to impaired water body (303d listed).
- Proximity of site to sensitive habitat/endangered species.
- Estimated volume of discharge.

- Proximity of site to public water supply (well head, monitoring wells)
- Beneficial uses for affected water bodies.
- If discharge to storm drain, condition of storm drain (clog, etc.)
- TSS concentration in discharge and turbidity.
- Other materials discharged from site (concrete washout, sanitary washes, etc.)

Education

1. Internal/Municipal Education:

The City of San Diego plans to conduct two levels of education and training for staff: General and Activity Specific. All staff will receive a basic introduction to the issue via a "General Storm Water" workshop created and funded by the General Services Storm Water Pollution Prevention Program. Additionally, those departments or work groups that perform work activities specifically identified in, and affected by, the Permit will create and execute and fund Activity Specific training sessions to introduce new work processes, functions and behaviors that incorporate the Storm Water Best Management Practices (BMPs) necessary for staff to prevent illegal discharges into the City's storm water collection and conveyance system and receiving waters. Additionally, the Departments will fund the External Education and Outreach elements in this plan. All education and outreach covered by the permit shall contain the phrase, "Another City of San Diego Think Blue Program protecting our beaches, bays and watersheds."

A) General Storm Water Training

The General Storm Water workshops, while created by the Storm Water Program, are primarily being given by trainers to the staff of their respective departments. And, Items 2, 3, 4, 5 and 6, below, are the educational materials created for the workshops. A "Train the Trainer " workshop was also created and given by the Storm Water Program (Item 7) to familiarize the trainers on the material and subject matter prior to rolling out the General Training workshop to their department staff.

Table 3.4-3. Storm Water Program General Training.

ITEM	AVAILABLE
1. Clean Water Leader/3-Cs BMP Reference Card	July 2001
2. General Storm Water Training Video	October 2001 Completed by June 2002
3. Think Blue Brochure	October 2001
4. Stop Pollution Pad	October 2001
5. Employee Knowledge & Behavior Survey ***To be given before and after each General Storm Water Workshop by department trainers***	October 2001

ITEM	AVAILABLE
6. Frequently Asked Questions for department Trainers	October 2001
7. Train the Trainer Sessions Training of department trainers on content and materials for the General Storm Water Workshops	September 10-14, 2001
8. Storm Water Newsletter	July/August 2002*
9. Training of New Employees on General Storm Water information	

**** Note that Items 1 through 7 occurred in FY 2002 for city-wide distribution, and that Item 8 is slated for Fiscal Year 2003 and reflects an available date.***

B) Activity Specific BMP Training(s):

For the past two years, Resident Engineers in Field Engineering Division have received specific storm water training regarding construction site pollution prevention including the internal policies regarding noncompliance. Training will be provided in future years prior to the rainy season. The Field Engineering Division will work closely with the Storm Water Program to create an updated training module annually for inspectors to emphasize the importance of the issue and provide the basics related to pollution prevention.

Since its inception in the mid-1990s, the City's Construction Management Academy (CMA) has included a section on storm water. This past year, the time allowed for storm water regulations, pollution prevention, BMPs has been increased to two hours. Three to four academies are held each year to provide basic information about all aspects of Public Works inspection.

The following training activities will be conducted by the individual divisions within the departments for the appropriate work group(s):

Table 3.4-4. Department Training Activities.

ITEM	AVAILABLE*
1. Activity Specific training	Completed by Oct. 2001 in Field and Dec. 2001 by MWWD (annually (or as-needed) thereafter)
2 Activity Specific Training of New Employees .	As needed
3. Notice of Non-Compliance "Examples" distributed to staff to explain how to properly document and "warn" contractor of violations.	Ongoing
4. Storm Water Pollution Prevention Program checklists	Revised as necessary

ITEM	AVAILABLE*
5. Construction Management Academy has a 2-hour component for Storm Water Pollution information. Mandatory for all new hires/resident engineers with participation by other Departments and outside companies.	3 – 4 times per year
6. A Field Engineering article on Storm Water efforts and issues will be a regular feature the City-wide Storm Water Newsletter distributed to all employees.	Quarterly Beginning July/August 2002
8. Distribute Storm Water Newsletter to Staff	Fall 2002
9. Field Engineering Staff coordination with Inspection Services in the Development Services Department to ensure consistent procedures from the right of way and public projects through to the private development.	Ongoing
10. Field Engineering Staff assisting in the development of a construction technical manual as part of a task force with General Services Department. S.D. County, Caltrans, L.A. City, and AGC being used as resources in this effort.	Ongoing.
11. City staff are developing standard Storm Water BMP plans and specifications for Capital Improvement Projects (CIP). Once the details are critiqued, they will be placed in the Standard Drawings for the region.	Ongoing.
12. On the last Friday of every month, the Resident Engineers meet to discuss inspection methods for various aspects of construction ("trouble shooting"). This forum provides an opportunity to discuss areas of concern with respect to enforcement of Storm Water BMPs.	Monthly.
13. Field Engineering and Street Division have added a procedure to ensure that post-construction Storm Water BMPs are properly turned over to Street Division for maintenance.	Ongoing.

**** Note the completion dates listed are estimated. Actual completion dates may vary depending upon other program factors.***

2. External Education:

The primary external audiences for construction activities include: Construction (Contractors, developers, property owners, project applicants), Quasi-Governmental (community planning groups), General Public and Construction related Professional Organizations. The Departments involved with construction related activities have maintained a close working relationship with construction and engineering design organizations to continually improve upon the methods of construction and reduce the impacts to the public. Therefore, the education and outreach for external audiences will continue to work towards these goals while implementing methods to reduce the discharge of pollutants into the storm drain conveyance system and receiving waters that may be generated from construction activities.

In Spring 2001, the Storm Water Program assisted the Engineering & General Contractors Association (EGCA) in developing a 2-day sediment and erosion control

course. This course was designed to provide sufficient training to attendees so that they can serve as a qualified person on a construction site. It is taught by leading sediment and erosion control experts and includes hands on field application of BMPs.

Table 3.4-5. External Education Activities

ITEM	AVAILABLE *
1. Articles to local trade publications and journals and association newsletters shall be written and offered for publication by Field Engineering.	July 2002- As appropriate
2. All new development shall use Storm Drain Concrete stamps OR Thermoplastic reflective pavement markings or stencils that are bilingual (English and Spanish), and read “No Dumping! Drains to Ocean (Bay).”	October 2002
3. Training for Construction Managers (consultants)	December 2001
4. AGC Partnering Meetings- provide Storm Water BMP and inspection related information and developments to members as appropriate	January 2002, Every fall and quarterly thereafter
6. Construction Community Notices for all active projects are sent out September through December. These notices will include information about the Storm Water BMPs used on the project and the importance of leaving the protective barriers in place during construction, especially during a rain event. These notices will also provide the community with an illegal discharge number should dirty water or other pollutants be seen leaving the site and entering the storm water conveyance system (See item 1 above).	Annually – September through December
7. Language has been added to subdivision and permit plans to ensure owner/contractor conformance in the field.	September 2001
8. Pre-construction meetings are now held on all grading jobs for CIP, subdivision, and permit projects with a FACT sheet and inspector’s Checklist distributed to the contractors and owners, explaining the City’s expectations for erosion and sedimentation control.	Ongoing.
9. Field Engineering is working with EOCP to prepare educational/informational meetings with the contracting community and subcontractor community on “how the City of San Diego works”. It is an effort to recruit contractors to perform City work, create networking between contracting firms, and outreach to Disadvantaged Businesses. In that forum, the group will be told about the procedures for storm water pollution prevention via the FACT sheet authored by the Field Engineering Division.	Ongoing.
10. Field Engineering is also working with EOCP on Sub-contractor Outreach Seminars. Storm water information and expectations will be available at these seminars.	Ongoing.

**** Note the completion dates listed are estimated. Actual completion dates may vary depending upon other program factors.***

As other opportunities arise to bring this issue to the forefront with the construction industry, the City will further advance this goal.

3.4.3 Phasing

The Departments responsible for construction inspection anticipate the following activities to be implemented over the next five years.

Year 1 (July 1, 2001 – June 30, 2002):

- Prepare/Implement education program
- Enforce BMP requirements for construction activities.
- Implement existing activities that are considered “storm water practices”

Year 2 (July 1, 2002 – June 30, 2003):

- Modify (as necessary) and enforce BMP requirements for construction activities.
- Education activities
- Prepare & submit annual activities report
- Revise budget

Year 3 (July 1, 2003 – June 30, 2004):

- Modify (as necessary) and enforce BMP requirements for construction activities.
- Education activities
- Prepare & submit annual activities report
- Revise budget

Year 4 (July 1, 2004 – June 30, 2005):

- Modify (as necessary) and enforce BMP requirements for construction activities.
- Education activities
- Prepare & submit annual activities report
- Revise budget

Year 5 (July 1, 2005 – June 30, 2006):

- Modify (as necessary) and enforce BMP requirements for construction activities.
- Education activities
- Prepare & submit annual activities report
- Revise budget

Actual implementation of the activities listed above is dependent upon identification of funding in future yearly budgets and City Council approval.

3.4.4 Annual Assessment

The following form is representative of the quantitative and qualitative measures that will be tracked by the Storm Water Program regarding the Construction Contracts component in order to prepare the Jurisdictional Urban Runoff Management Program annual assessment. ***These assessment factors and questions are presented for information only; some questions may be modified prior to each annual assessment period, and not all of the factors or questions below may apply to each component's responsible department(s)***. Prior to each fiscal year, a tailored Annual Assessment Form will be distributed to responsible departments, and will include an Excel spreadsheet containing direct and indirect quantitative and qualitative measures similar to the example below. The Storm Water Program will provide a blank copy of the Annual Assessment Form and additional guidance to department management prior to the beginning of each fiscal year. Submission of this report will require department director approval.

Program Assessment Reporting Form – Construction Contracts Component

QUANTITATIVE ASSESSMENT:

Activity	Quantity	Units	Comments
Number of high priority construction sites identified		#	
Number of high priority construction sites targeted for inspection		#	Due to calendar-year vs. fiscal year, staffing, budget, etc., the number of sites targeted for inspection may be less than the actual number of sites.
Number of high priority construction sites inspected		#	Number of sites (not the number of inspections, which may or may not be the same).
Number of medium priority construction sites identified		#	See above.
Number of medium priority construction sites targeted for inspection		#	See above.
Number of medium priority construction sites inspected		#	See above.
Number of low priority construction sites identified		#	See above.

Number of low priority construction sites targeted for inspection		#	See above.
Number of low priority construction sites inspected		#	See above.
Total number of construction sites in compliance or on a compliance schedule		#	
Number of facilities referred to the Regional Board for enforcement of State General Construction Permit		#	Equals number of facilities that are subject to State General Construction Permit, but have not filed NOI or may be in violation of General Permit (e.g. no SWPPP, etc.)

QUALITATIVE ASSESSMENT:

1. Describe the major accomplishments of the Construction Contracts component over the past year. (procedural changes, new requirements, ordinance revisions, guidance material developed/adopted)

2. Summarize the educational and outreach activities associated with the Construction Contracts component has conducted over the past year.

3. Summarize new activities or improvements to be implemented next year as a result of your self-assessment.

4. Other comments.

FINANCIAL ASSESSMENT:

Estimated annual storm water expenditures:
Personnel Expenditures: _____
Non-personnel Expenditures: _____
Total expenditures: _____